"The inland waterways of the Atlantic Coast are an important factor in the national defense in several ways. Not only do they afford a secure passage for certain vessels of the Navy, but the sounds particularly are an outer line of defense, the ditch of the fortress. Submarines, destroyers and torpedo boats secure in their smooth waters, and able to pass out through occasional passages, readily defended by mines, can drive off an enemy's fleet and a hostile landing will be impossible."

The Naval View of Inland Waterways at Home and Abroad

Paper Read by

Rear Admiral C. S. SPERRY, U. S. N.

AT THE SECOND ANNUAL CONVENTION

of the

ATLANTIC DEEPER WATERWAYS ASSOCIATION

NORFOLK, VA.

November 18, 1909

"Destroyers and submarines owing to the fatigue of their crews and to the character of their motive power, can only reach their highest efficiency when operating from a secure and comfortable base, and it is evident that the conditions in this respect are ideal along the greater part of the Atlantic Coast, if the waterways are adequately improved."

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THIRD ANNUAL CONVENTION

PROVIDENCE, R. I.

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THE NAVAL VIEW OF INLAND WATERWAYS AT HOME AND ABROAD

Paper read by Rear Admiral C. S. Sperry, U. S. N., at Second Annual Convention of the Atlantic Deeper Waterways Association, Norfolk, Va., November 18, 1909

ADMIRAL SPERRY: Mr. Chairman, Mr. President, Ladies and Gentlemen: It is certainly a distinguished honor to be called upon by your Association to present the naval view of so important a matter, but permit me to suggest that while I am greatly interested, and so are my brother officers in the naval view of the intercoastal waterways, we are equally interested in the development of the intercoastal waterways commercially and for the general advancement of the country.

The inland waterways of the Atlantic coast are an important factor in the national defense in several ways. Not only do they afford a secure passage for certain vessels of the navy, but the sounds, particularly, are an outer line of defense, the ditch of the fortress. Submarines, destroyers and torpedo boats, secure in their smooth waters, and able to pass out through occasional passages, readily defended by mines, can drive off an enemy's fleet and a hostile landing will be impossible.

Several times within the last fifteen years torpedo boats drawing from six and one-half to seven feet, have made the inland passage from Key West to New York Bay, but with more or less difficulty in the region below Norfolk and with some damage.

Torpedo boats are not large enough to take the sea and attack an enemy to the best advantage at a distance from the coast, and they have been superseded in the building program

of the Navy Department by destroyers and submarines. In order that the largest destroyers and submarines built or contemplated may pass freely and safely through the canals and passages, an ultimate depth of about fourteen feet should be considered, and the radius at bends must be very considerable. The torpedo boats which made the inland passage found their greatest obstacle in the sharp bends, and the new destroyers are about 295 feet in length.

Destroyers and submarines, owing to the fatigue of their crews, and to the character of their motive power, can only reach their highest efficiency when operating from a secure and comfortable base, and it is evident that the conditions in this respect are ideal along the greater part of the Atlantic coast if the waterways are adequately improved. As you are aware, the Navy Department has established a complete chain of most efficient wireless stations from Maine to Texas, and the destroyers and patrol vessels being equipped with wireless, as well as the fleet, communication throughout the whole system will be practically instantaneous.

In discussing the internal waterways as a line of defense, and as a secure passage for coastwise traffic in time of war, it is imperative that your attention should be called to the fact that in the present undefended state of the entrance to the Chesapeake, this line can be cut in two and absolutely blocked by an enemy. Not a single gun could be brought to bear upon a hostile fleet passing from the Capes to the head of Chesapeake Bay, where the great railway bridges are exposed to destruction, and an enemy, with full liberty to land in safety where he pleases, may also blockade or attack Norfolk, Richmond, Newport News and Baltimore, while his fleet lies comfortably at anchor in Lynnhaven Bay.

In 1906 the Taft National Coast Defense Board, so called because the Honorable Wm. H. Taft, then Secretary of War, was its president, in recommending the fortification of the entrance to the Chesapeake, reported:

"Commercially and strategically Chesapeake Bay is to-day, as it always has been, of the very first importance. With the

entrance as it is now, unfortified, a hostile fleet, should it gain control of the sea, can establish, without coming under the fire of a single gun, a base on its shores, pass in and out at pleasure, have access to large quantities of supplies of all kinds, and paralyze the great trunk railway lines crossing the head of the bay." (Coast Defenses of the United States Report to the President, February 1, 1906).

About half way between Cape Charles and Cape Henry, which are about ten miles or 20,000 yards apart, lies the shoal known as the Middle Ground, with an average depth of only fifteen feet of water, on which a fort could very readily be constructed, which, with a cross-fire from heavy guns placed on Cape Charles and Cape Henry, and with the aid of searchlights and mines, would effectively close the entrance to an enemy. The passage north of the Middle Ground is too shallow and tortuous for heavy ships, and could readily be prohibited by mines, while the southern passage could be narrowed in the same manner. The leading Russian battleships were sunk at the Battle of the Sea of Japan in May, 1905, at a range of 6,000 yards, and as modern coast guns and mortars have a range of at least 12,000 yards, it is evident that a channel only 10,000 yards wide could be effectively closed by fortifications on the Middle Ground and Cape Henry, and it, therefore, seems remarkable that public sentiment in this section has not demanded the carrying out of the recommendations of the Taft board. The guns at Hampton Roads afford no protection, as an enemy in Lynnhaven Bay could land there or at any other place, as the British did when they burned the Public Buildings in Washington in the War of 1812.

Turning to another aspect of waterways, great masters of railway transportation, like Mr. J. J. Hill, have been publicly quoted as asserting that it is practically impossible to increase railway facilities in a measure adequate to the handling of the commerce of the country, and it is evident that such bulk freights as fuel and raw material are the principal factors in the congestion. Either undue delay or undue expense in the transportation of raw material restricts the output of the bet-

ter paying freights of manufactured articles, and our natural development is hindered. It, therefore, seems apparent that a point has been reached where ample water transportation will not only add to the material prosperity of the country in general, but will also promote that of the railroads themselves.

The rate per hour of the movement of freight through waterways may be slow, but the ultimate delivery ought to be far speedier than by a congested railway system, while the cost is only a fraction. The security of inland navigation not only reduces the cost of insurance, but it enables immense cargoes to be carried in light and cheap barges, utterly unfitted for exposure to a heavy sea, and for this reason, while the Cape Cod Canal will enable vessels to avoid the dangers of the passage around Cape Cod, it is still extremely important to avoid the exposure due to passing outside at all by providing an inland water route from Long Island Sound direct to Massachusetts Bay by one or another of the routes already under consideration.

The importance of the development of the waterways between Norfolk and Jacksonville, as well as farther south, cannot be exaggerated. The character of the coasts of the Carolinas and Georgia is such that the very estuaries and rivers which lend themselves to the concentration of the natural products of those States in the great seaports by water transport are a bar to an effective coast line railway.

It seems well to note here the essential difference of the conditions under which internal waterways in general and harbors are improved and developed. A few miles of dredging will bring into port vessels of rapidly increasing tonnage, and how quickly the larger and more economical ocean carriers follow the available draft is shown, for instance, in the White Star Liners "Olympic" and "Titanic" now building, to take advantage of the 40-foot channel into New York with a draft of 37½ feet on a displacement of 60,000 tons. Lloyd's Register of British shipping shows that in 1893-4 there were only 87 steamers of and above 5,000 tons, while in 1908-9 there were 599, and during the same period the steamers of 3,000

tons and above 2,000 tons decreased in number from 1,277 in 1893-4 to 1,013 in 1908-9. It is, of course, utterly impossible to increase the depth of inland waterways commensurately, and it follows that terminals for transhipment between interior navigation vessels and great ocean carriers will be just as imperative as for railways, and that unless they are deliberately and carefully planned on an adequate scale, development will be in a measure vain.

The completion of the Panama Canal by 1915, if not earlier, by the splendid administration now in charge of the work, may be accepted as certain, and should be considered in connection with the transportation facilities for concentrating freight at the Atlantic ports. The west coast of South America is in the same longitude as the Atlantic seaboard of the United States, and with trifling deflections about Cuba, the course from New York to Callao is nearly a straight line. From New York to Callao, via the canal, the distance is 3,400 miles, while from the entrance to the English Channel to Callao by the same route it is 6,500 miles, and around Cape Horn it is 10,100 miles. The whole west coast of South America is awakening and developing, and Peru in particular is calling for American trade and capital. Our coal, lumber, cotton and other manufactured goods should monopolize that trade, bringing return cargoes of nitrates and coast products, which now go to Europe, developing commerce and industry to the benefit of all and the harm of none.

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NEW ENGLAND TO FLORIDA

will be sent regularly to all municipalities, corporations, firms and individuals who have attached themselves as members; and at the Norfolk Convention which President Taft attended, more than 800 new members were guaranteed.

The next Convention of the Association is to be held at Providence, R. I., August 31, September 1, 2 3, 1910, when it is hoped the membership will be doubled.

Every business man, every agriculturalist, every manufacturer, every shipper, every land-owner, every engineer, every sailing-master, every ship-owner, every yachtsman, every motor-boat builder, owner or operator should connect himself with this important movement.

Individual membership, $5 per annum; firms or corporations, $10; trade organizations, $15 to $75, according to membership; waterway associations, $75; municipalities of 5000 or less, $50; over 5000, $100.

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